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# (12) United States Patent

### Bernstein et al.

# (54) OCCLUSION DEVICE AND METHOD OF USE THEREOF

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- (52) **U.S. CI.** CPC .. **A61B 17/12136** (2013.01); **A61B 17/12109** (2013.01); **A61B** 2017/1205 (2013.01)
- (58) **Field of Classification Search**CPC ....... A61B 17/12109; A61B 17/12136; A61B 2017/1205

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#### (56) References Cited

#### U.S. PATENT DOCUMENTS

4,425,908 A	1	*	1/1984	Simon A6	1F 2/01
					128/899
4,441,495 A	1		4/1984	Hicswa	
4,517,979 A	1		5/1985	Pecenka	
4,545,367 A	1		10/1985	Tucci	
4,832,055 A	1	*	5/1989	Palestrant A6	1F 2/01
					128/899
5,181,921 A	1		1/1993	Makita	
5,634,942 A	1	*	6/1997	Chevillon A6	1F 2/01
				(	506/194
5,653,690 A	1		8/1997	Booth et al.	
5,669,933 A	1	*	9/1997	Simon A6	1F 2/01
				(	500/191
5,779,672 A	1		7/1998	Dormandy	
(Continued)					

#### FOREIGN PATENT DOCUMENTS

WO WO1999/012484 3/1999 WO WO2010/116074 10/2010

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### (57) ABSTRACT

One aspect of the present invention provides a device for occluding a body cavity. In one embodiment, the occlusion device includes include a hub extending from an upstream end to a downstream end and along a central axis. A number of struts are attached to the upstream end and extend upstream from the hub. An expandable balloon is attached to the downstream end and extending downstream from the hub. Another aspect of the present invention provides a method for occluding fluid flow within in a body cavity including placing an occlusion device within the body cavity.

## 12 Claims, 4 Drawing Sheets

